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ATHERMALIZED BEAM LAUNCHERS FOR PICOMETER METROLOGY GAUGES USED IN SPACE INTERFEROMETRY MISSION

Tallis Chang, Duncan Liu, Philip Dumont, Randy Bartos, Andreas Kuhnert, Jeffrey Yu, Larry Scherr, Peter Halverson, Feng Zhao, and Stuart Shaklan

California Institute of Technology, Jet Propulsion Laboratory, M/S 306-388, 4800 Oak Grove Drive, Pasadena, CA 91109.

Contact Author: Tallis Chang
818-393-0270 Voice
818-393-0317 FAX
tallis.chang@jpl.nasa.gov

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We report our progress in building beam launchers that will meet the 10-picometer requirement of the Space Interferometry Mission. The beam launchers, heterodyne laser interferometric devices, are a critical part of the entire metrology subsystem. At the picometer level these devices have many challenging problems associated with changing variables, such as temperature, beam shear, and imperfect optics. We have identified many of these and incorporated them in the present design. The description of our present athermalized beam launcher design along with some preliminary test data will be presented.